Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A system for modifying input image data used by a projector in generating a displayed image, the projector supporting number of unique levels, the system comprising:

a luminance uniformity engine configured to process the input image data, based on spatial location of pixels forming said input image data, so as to generate corrected image data that is uniform in luminance;

a dither engine configured to process the corrected image data from the luminance uniformity engine so as to generate dithered image data; and

a converter configured to convert the dithered image data into the unique levels of the projector.

2. (Original) The system of claim 1 wherein the luminance uniformity engine comprises:

a front-end look-up table (LUT) that imposes a gain on the input level to produce a resulting input level;

a spatial attenuation array configured with a plurality of distortion correction values; and

a multiplier circuit for multiplying the resulting input level from the front-end LUT by

a selected distortion correction value from the spatial attenuation array to produce a luminance corrected input level.

3. (Original) The system of claim 2 wherein the input image data includes a level and x,y coordinates for each level, and

the distortion correction values of the spatial attenuation array are indexed by the x,y coordinates of the input image data.

4. (Original) The system of' claim I wherein the dither engine comprises:

a dither array configured with a plurality of dither values;

an adder circuit configured to generate a sum by adding a selected dither value to the luminance corrected input level; and

a shift register configured the shift the sum by a selected number of bits, thereby producing a dithered output level.

5. (Original) The system of claim 4 wherein the dither engine has a number of input levels and a number of output levels, and the number of output levels of the dither engine is one of equal to and greater than the number of stated levels of the projector.

6. (Original) The system of claim 3 wherein the input image data includes a level and x,y coordinates for each level, and the dither values are indexed by the x,y coordinates of the levels of the input image data.

7. (Original) The system of claim 4 wherein the converter is a back-end look-up table (LUT) that is configured to map dither output levels to unique projector levels.

8. (Original) A method for correcting projector non-uniformity and increasing apparent amplitude resolution, the projector supporting a stated number of levels, the method comprising the steps of:

measuring the projector non-uniformity at a plurality of the stated levels;

determining the number of unique levels supported by the projector;

utilizing the non-uniformity measurements to generate uniform projector image data; and

dithering the modified projector image data such that a displayed image appears to have been formed either from the stated number of levels or from a greater number of levels than the stated number.

9. (Original) The method of claim 8 wherein the step of determining the number of unique projector levels comprises the steps of:

generating a displayed image from the projector for each of the plurality of stated projector levels;

capturing each of the displayed images with a camera, each camera captured image having a plurality of pixel values;

averaging all of the pixel values for each camera captured image; and

comparing the averaged pixel values computed for two adjacent stated projector levels to determine whether the two stated projector levels are unique.

10. (Original) The method of claim 9 wherein the step of comparing the averaged pixel values comprises the steps of:

computing the difference between the averaged pixel values for the two adjacent stated projector levels;

finding the two adjacent stated projector levels to be unique provided that the computed difference is greater than a threshold times the difference between a maximum averaged pixel value considering all of the plurality of stated levels and a minimum averaged pixel value considering all of the plurality of stated levels; and

finding the two adjacent stated projector levels to be redundant provided that the computed difference is less than a threshold times the difference between the maximum averaged pixel value and the minimum averaged pixel value.

11. (Original) The method of claim 10 wherein the threshold is on the order of 0.001.

12. (Original) The method of claim 8 wherein the uniform projector image data has a plurality of corrected levels, and the step of dithering the uniform projector image data comprises the step of utilizing a selected dither template pattern to convert the corrected levels of the uniform image data to corresponding dither output levels.

13. (Original) The method of claim 8 further comprising the step of mapping each dither output level to a respective unique output level supported by the projector.

14. (Original) The method of claim 13 wherein the selected dither template pattern is a void and cluster pattern.